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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,966	09/20/2001	Gregory S. Andre	017750-413	1908

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EXAMINER	
AHN, SAM K	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/955,966	ANDRE ET AL.	
	Examiner	Art Unit	
	Sam K. Ahn	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *032406*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 06/29/06 have been fully considered but they are not persuasive. On page 6 of the argument, applicants assert that Bastiani teaches the packet generator/decoder that is common for both send and receive, and does not discriminate between types of input for separate buffering. The examiner respectfully disagrees. The Host Controller or the packet generator/decoder independently receives and transmits instructions via Tx Rx elements 372) via the system bus (166 in Fig.10) from one or more peripheral devices (106 in Fig.10, note col.1, lines 30-42) connected to the system bus. And Bastiani further teaches separate locations between DMA (356,358,360 in Fig.41) and control actions (wherein control actions are interrupts, 362,366 in Fig.41), thus discriminate between types of input for separate buffering. Furthermore, Bastiani explains that the Host Controller have priority among different transmitting and receiving data packets (note col.48, lines 59-65).

   However, Bastiani does not explicitly teach wherein access to the multi-tier system bus is arbitrated such that control actions preempt DMA operations.

   Wilson teaches, in the same field of endeavor, wherein access to the multi-tier system bus (308 in Fig.3) is arbitrated (note col.3, line 66 – col.4, line 12, wherein different peripheral devices are arbitrating for the system bus) such that control actions preempt DMA operations (note col.10, lines 57-65, wherein interrupts or

control actions preempt DMA operations or operations to execute transferring of data to the system bus, 308).

Hence, both Bastiani and Wilson teach DMA operations and control actions wherein Wilson further teaches wherein interrupts or control actions preempt DMA operations or operations to execute transferring of data to the system bus, 308), thus results in reducing the number of interrupts, as taught by Wilson (note col.3, line 66 – col.4, line 12). Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Wilson in the system of Bastiani by having the function of arbitrating in the host controller (104a in Fig.10 of Bastiani) during the arbitrating phase (402,414 in Fig.2 of Wilson) for the purpose of reducing the number of interrupts, as taught by Wilson (note col.3, line 66 – col.4, line 12).

Claim Objections

2. Claims 1-9 are objected to because of the following informalities:

In claim 1, line 8, "DMA" should be "direct memory access (DMA)", wherein claims 2-9 directly or indirectly depend on claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bastiani et al., USP 6,609,167 B1 (Bastiani, cited previously) in view of Wilson et al. USP 6,718,413 B1 (Wilson, cited previously).

Regarding claim 1, Bastiani teaches a transceiver (172 in Fig.10) for use within a multi-tier system bus configuration comprising: means for independently receiving and transmitting instructions (Host Controller 368 in Fig.41 independently transmitting and receiving via Tx Rx elements 372) via the system bus (166 in Fig.10) from one or more peripheral devices (106 in Fig.10, note col.1, lines 30-42) connected to the system bus, means for buffering instructions received and transmitted (354, 356, 358, 360, 362, 364, 366 in Fig.41) via the system bus (166 in Fig.10) to provide a separate buffering of control actions (wherein control actions are interrupts, 362,366 in Fig.41) from DMA operations (356,358,360 in Fig.41), wherein said means for independently receiving instructions is configured to discriminate between different types of input, and wherein said means for independently transmitting instructions is configured to interleave said instructions (as taught by Bastiani, DMA instructions are buffered in 356,358,360 elements, while HCI instructions including interrupt are buffered in a separate memory (362,364,366), thus discriminating and interleaving the packets being transmitted and received (note col.48, lines 50-67).
However, Bastiani does not explicitly teach wherein access to the multi-tier system bus is arbitrated such that control actions preempt DMA operations.

Wilson teaches, in the same field of endeavor, wherein access to the multi-tier system bus (308 in Fig.3) is arbitrated (note col.3, line 66 – col.4, line 12, wherein different peripheral devices are arbitrating for the system bus) such that control actions preempt DMA operations (note col.10, lines 57-65, wherein interrupts or control actions preempt DMA operations or operations to execute transferring of data to the system bus, 308).

Hence, both Bastiani and Wilson teach DMA operations and control actions wherein Wilson further teaches wherein interrupts or control actions preempt DMA operations or operations to execute transferring of data to the system bus, 308), thus results in

reducing the number of interrupts, as taught by Wilson (note col.3, line 66 – col.4, line 12). Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Wilson in the system of Bastiani by having the function of arbitrating in the host controller (104a in Fig.10 of Bastiani) during the arbitrating phase (402,414 in Fig.2 of Wilson) for the purpose of reducing the number of interrupts, as taught by Wilson (note col.3, line 66 – col.4, line 12).

Regarding claims 2 and 5, Bastiani further teaches wherein said means for independently transmitting is configured to interleave the instructions based upon

instruction type (wherein the instruction types are divided between DMA and HCI, as explained above).

Regarding claims 3 and 6, Bastiani further teaches wherein said instructions are contained within packets and said means for independently transmitting is configured to interleave the instructions based upon packet type (as separate memories are buffers are implemented depending on the packet type).

Regarding claims 4 and 7, Bastiani further teaches wherein said packets comprise DMA and CA (control action or control interrupt or HCI) packet types (note col.48, lines 57-59).

Regarding claim 8, Bastiani further teaches wherein said means for receiving is configured to provide specialized control functions, such as a reset function (see Fig.26 and note col.42, lines 26-28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bastiani et al., USP 6,609,167 B1 (Bastiani, cited previously) in view of Wilson et al. USP 6,718,413 B1 (Wilson, cited previously) and Gephardt et al., USP 5,555,430 (Gephardt, cited previously).

   Regarding claim 9, Bastiani in view of Wilson teach all subject matter claimed, as applied to claim 8. As explained previously, Bastiani further teaches said specialized control functions, such as a reset function. However, Bastiani does not explicitly teach further control functions of a timer function and a broadcast function.

   Gephardt teaches in the same field of endeavor, having a system bus wherein packets are transmitted and received from the system bus and further teaches such control functions of the timer (timer latency) and broadcast (broadcast interrupt) functions (note col.22, line 61 – col.23, line 17). Therefore, it would have been obvious to one skilled in the art at the time of the invention to include the functions of timer and broadcast, as taught by Gephartdt in Bastiani's system for the purpose of increasing the control functions, and thus provide the system with a more controllable system through the control functions.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn
9/14/06

Khanh Cong Tran 09/18/2006

Primary Examiner KHANH TRAN